Project Summer Weight Environmental Assessment Trial (SWEAT) – Healthy Eating Active Living Mapping Attributes using Participatory Photographic Surveys (HEAL MAPPS): A Qualitative Approach to Understanding Unhealthy Weight Gain during Summer Months in Underserved Children

Undergraduate Thesis

Presented in Partial Fulfillment of the Requirements for Research Distinction in Human Nutrition in the College of Education and Human Ecology of The Ohio State University

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Abstract

Background: During the summer months, children from underserved homes are at risk for unhealthy weight gain. Little is known about the contributing food and physical activity environment factors.

Objective: The objective of this study was to determine the neighborhood-level environmental barriers and facilitators to healthy food and active living during summer break among children living in low-income, urban, neighborhoods.

Methods: This study is a part of a larger, multi-state, prospective observational research study, Project SWEAT, which aims to evaluate the behavioral and environmental determinants of unhealthy weight gain during the summer months in underserved elementary aged children. Students in grades pre-k through 5th attending two Columbus City elementary schools located in low-income, urban neighborhoods already participating in Project SWEAT were invited to participate in the HEAL MAPPS study. The Healthy Eating Active Living Mapping Attributes using Participatory Photographic Surveys (HEAL MAPPS) protocol, which engages participants by using their smartphone-like device to identify facilitators and barriers to healthy living through images and mapping software, was utilized. The HEAL MAPPS protocol was adapted for Project SWEAT to include four contacts: 1) orientation to project and equipment training; 2) individual interview discussing images and routes taken; 3) focus group per school site discussing common experiences with neighbors/fellow MAPPers; and

4) local community stakeholder meeting to present images/findings and develop community action plan for each respective community.

Results: Nine families enrolled, mapped routes within the neighborhoods of their respective schools and participated in the individual interviews (Contact 2); six of these families participated in focus groups (Contact 3). Children across both sites perceived their food and physical activity environments to have less barriers than their caregivers (overall food: $p<0.01$, overall physical activity: $p<0.01$, school 1 food: $p<0.01$, school 2 physical activity: $p<0.01$, school 2 food: $p=0.17$, school 2 physical activity: $p<0.01$). Perceptions by caregivers and children of food and physical activity environment barriers differed among the two school sites (caregiver food: $p<0.01$, caregiver physical activity: $p=0.81$, child food: $p=0.73$, child physical activity: $p<0.01$). Thematic analysis of photographs resulted in the following themes among neighborhood facilitators and barriers: 1) poorly maintained walkways; 2) scarce accessibility to healthy, affordable foods; 3) multiple abandoned properties; and 4) unsafe activity near common neighborhood routes.

Conclusions: With differences in findings across the two sites, interventions should be tailored to reflect the respective needs of the communities. This information should be used by local- and state-level stakeholders to improve low-income neighborhood environments in Columbus, Ohio to promote healthy eating and active living during summer months.

Dedication

This undergraduate thesis is dedicated to the families of HEAL MAPPS. The gift of your time and your eagerness to share your joys, struggles, and images of daily life made this work possible. I am humbled to have been entrusted with your stories and I am grateful for the honor and responsibility you have given me to share them. I promise to continue to make your stories heard and to be an advocate for improving communities and empowering families in their quest to live their healthiest, happiest, and most successful lives.

Acknowledgements

I am grateful for the influence of the strong, resilient, and kind women – Drs. Gunther, Hopkins, Kennel, Loza, and Jen Nelson – in my time at The Ohio State University. I am the product of your time and continued investment and I know that I am not whom I am and what I have accomplished of my own doing.

Dr. Laura Hopkins, thank you for your guidance and multiple puppy loans throughout my time as a member of our lab. Your friendship and mentorship has provided me with the confidence to tackle any task or obstacle in my path.

Dr. Julie Kennel, thank you for believing in me and providing the support to be successful in whatever I put my mind to. I am grateful to call you one of the voices of support as we work to improve the health of communities everywhere.

To Dr. Loza, thank you for sharing true empathy and compassion with me as I learned to manage life events outside of my control. You demonstrate the true heart of this University.

Jen Nelson, the hours you have spent advocating for the wellness of myself and our residents has shown me how to lead and advocate directly for the community I live in. You are the example of the leader I aspire to be.

To my family and my friends – thank you for never tolerating anything less than my best. The determination to never be satisfied is a fire in me I will never let go out, and I have you all to thank for that.

And to my left kidney, thank you for showing me the disparities that exist in our community's access to healthcare, healthy food, and safe exercise. Though my struggle with you may have become my story, it did not. Rather, you were the catalyst within me to become more than I thought I could.

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Vita

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Hopkins LC, Eneli I, Fristad M, Goodway J, Holloman C, Kennel J, Melnyk B, Webster A, **Sharn A**, Gunther C. Feasibility and acceptability of technology-based caregiver engagement strategies delivered in a summertime childhood obesity prevention intervention: results from the Camp NERF (Nutrition, Education, Recreation, and Fitness) study. *BMC Pilot and Feasibility Studies.* Submitted March 2018, Under Review.

Fields of Study

Major Field: The Ohio State University Human Nutrition Program
Minor Field: Biology
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Chapter 1: Introduction

The U.S. pediatric obesity rate has climbed steadily since the 1980s from 5.0% to 12.4 % for children 2-5 years of age, 6.5% to 17.6% for children 6-11 years of age, and 5.0% to 17.6% for children 12 to 19 years of age.[1] The rapid rise of obesity in this short time period has led to a declaration of pediatric obesity as an epidemic in the U.S. Though the rate of childhood obesity is currently recorded at a plateau within the U.S., the overall number of those affected is still high.[2]

Two recent reviews of literature by Baranowski et al.[3] and Franckle et al.[4] have summarized the emerging trends of unhealthy weight gain in the summer. Inappropriate weight gain during the summer months was present across all ethnic populations, though some subpopulations may be at more risk for weight gain than others.[5–9] Children that are already overweight or obese, Black, or Hispanic are statistically more at risk than their white non-Hispanic and non-Hispanic Asian peers.[5–10]

There are limited data on what affects health and weight gain during the summer in school aged children, however, the loss of the potential protective factor of being in school has been identified.[2] Schools play a protective, educational, and critical role in promoting positive health behaviors of balanced diet and exercise during the academic year.[11] During the summer, children lose access to a structured environment, which provides healthy meals and snacks, opportunities for physical activity, and access to public health policies and programs. A study conducted by Sallis et al.[12] demonstrated that the increase and rapid rate of obesity in the United States cannot be attributed to biology

alone, and various health behaviors, community, and socioecological facets must be examined to determine a future course of action for combating unhealthy weight gain and obesity. Though obesity rates have been rising globally over the past decades, the U.S. food environment has drastically changed, providing easy access to high caloric, tasty, and inexpensive foods.[12] The current increase in childhood obesity and its prevalence could be in part due to the child's lack of structured exercise and less restricted food environment at home. Few efforts have been directed at finding a solution to combat health declines during the summer months in children and adolescents within or outside schools,[13] and as obesity affects nearly a third of our nation's children, the rate is expected to increase as well as the gap in health between minorities.[1]

Throughout summer 2014 and 2015, the impact of summer programming on the prevention of unhealthy weight gain was investigated through the Camp NERF (**N**utrition **E**ducation **R**ecreation and **F**itness) research study.[14] The hypothesis was that the type of programming by varying factors of nutrition, physical activity, and mental health education across three study groups would influence the outcome.[14] It was expected that the group with exposure to all three types of programming would experience the greatest benefits. The results from this study indicated that all three study groups had the nearly the same effect on preventing unhealthy weight gain, and being engaged in any type of programming yielded a potential protective effect.[15]

A lack of information regarding the health behaviors and environment of children during the summer months leading to the causes of unhealthy weight

gain led to the design of another study – Project SWEAT. The objective of Project SWEAT was to apply an in-depth, mixed methods examination of dietary, physical activity, food, and social environments of low-income, racial or ethnic school-age children.[16] Project SWEAT was a multi-state, prospective cohort design and aimed to delve deeper into the causal behaviors that affect weight gain trajectory among a diverse convenience sample of underserved children who attend summer programming and those who do not.[16] In addition, a subset of children was evaluated to learn of their food, social, and physical activity environments in the summer through both quantitative and qualitative data collection, utilizing the Healthy Eating and Active Living Mapping Attributes Using Participatory Photographic Surveys (HEAL MAPPS) protocol[17].

Using the HEAL MAPPS protocol, participants engaged the use of a smartphone-like devices to identify barriers to healthy living during the summer months in neighborhoods of underserved children. The HEAL MAPPS methodology sought to evaluate barriers and facilitators to healthy eating and active living in a qualitative format, giving a visual aide in evaluating the community and its challenges regarding healthy choices.[17] This allows for researchers and community leaders to work together to combat socioecological barriers and work together to find solutions. Through the use of a smartphone-like device, the Garmin Oregon 650, photos were taken and shared with researchers along with their geographic coordinates. Participants shared moments of their lives through images and allowed researchers to see the community in which they live.[19] By sharing their moments and their barriers to

healthy choices, researchers, community members, and community leaders may work together to develop a plan for positive social and community change.

To our knowledge, the HEAL MAPPS protocol had not been employed previously with an urban population of caregivers and children focused on barriers and facilitators to healthy eating and active living during the summertime window of risk specifically. Therefore, the objectives of this study were to utilize and adapt the HEAL MAPPS methodology to:

1) Determine the facilitators and barriers to healthy eating for children and adolescents during the summer months.
2) Determine the facilitators and barriers to physical activity for children and adolescents during the summer months.

Chapter 2: Methods

Project SWEAT Main Study and Sub-Study Recruitment

The research team at each university worked with the Columbus City School District for approval and assistance with all research-related activities. The project took place over the course of two school years – School Year 1 and School Year 2. All children, with permission of caregivers, in pre-kindergarten (pre-K) through fifth grades were invited to participate in the Main Study during School Year 1. An informational sheet describing the study and a demographic survey (Appendix A: Main Study Caregiver Consent, Appendix B: Main Study Caregiver Permission, Appendix C: Demographic Survey) was sent home with each child in pre-K through 5th grades at the schools. Data will be collected from all children from whom the Project SWEAT research team receives a completed demographic survey. Child assent was obtained at time of data collection (Appendix D: Main Study Child Assent).[18]

A subset of SWEAT participants was recruited from the larger sample for the Project SWEAT Sub-Study. Based on caregiver responses to questions on the demographic survey regarding expected child participation in summer programming, caregivers were contacted and asked to participate. Children and caregivers completed additional caregiver permission forms, caregiver consent forms, and child assent forms (Appendix E: Sub-Study Caregiver Permission Form, Appendix F: Sub-Study Caregiver Consent, Appendix G: Sub-Study Child Assent Form *Appendix G: Sub-Study Child Assent Form*).[18]

HEAL MAPPS Recruitment

By consenting to participate in the Project SWEAT Sub-Study, participants agreed to be contacted to participate in HEAL MAPPS. Ten families who lived within an approximate 1-mile radius of their respective school were selected from the Project SWEAT sub-study sample and invited to participate in the HEAL MAPPS study. Participant recruitment began by contacting the families, both in person and via text message using TextIt, an internet-based texting platform being utilized with participants in the Project SWEAT main study and asking them if they were interested in becoming more involved with Project SWEAT.

If interested, participants agreed to complete a series of 4 contacts: 1) device orientation, 2) in-depth interview, 3) focus group – 1 per school site, 4) community stakeholder meeting (Figure 1) via previous main-study and sub-study consents and media waiver (Appendix H: Media Consent Form).

Data Collector Training

Data collectors were undergraduate and graduate students from nutrition, public health or other related fields, as well as registered dietitian nutritionists. All underwent an eight-hour data collection training, which included didactic sessions followed by role-playing to practice techniques and become familiar with the instruments.

With regards to HEAL MAPPS training, a team of 13 fellow undergraduates were trained to facilitate contacts 1 and 2 - project orientation and in-depth interview - via a 1-hour, in-person discussion and educational

presentation (Appendix I: HEAL MAPPS Undergraduate Team Training PowerPoint).

Data Collection Timing

Children's anthropometrics and biometrics were measured at baseline (end of School Year 1) and post-summer (beginning of School Year 2) using the Project SWEAT Child Biometric and Anthropometric Form (Appendix J: Summer Weight Environment Assessment Trial (SWEAT) Child Anthropometric and Biometric Form). Demographic information was obtained from the demographic survey (Appendix C: Demographic Survey) completed with each child's parent or primary caregiver.

Measurements took approximately 10 minutes and were conducted in the child participant's school.

Data Collection

Household Demographics: On the SWEAT informational sheet, caregivers were asked to complete the SWEAT Demographic Survey (Appendix C: Demographic Survey). The questions on the SWEAT Demographic Survey pertained to: 1) the child(ren)'s sex, age, current grade, ethnicity, and race; 2) the primary caregiver's sex, age, ethnicity, and race; and 3) the education level and current employment status of the primary caregiver.

Household Food Security: Household food security were assessed using the Short Form of the USDA Household Food Security Scale.[19] Based on

the number of affirmative responses, a food security category or scale score were calculated and compared to the main study sample.

Child zBMI (Height and Weight): Child height and weight were measured by a trained data collector using a Hopkins Road Rod Portable Stadiometer and BalanceFrom High Accuracy Digital Scale. BMI z-scores and percentiles were calculated and compared to the main study sample using the statistical software Stata zanthro package.[20]

Child Waist Circumference: Child waist circumference were assessed using the NHANES waist circumference assessment protocol.[21] Waist circumference z-scores and percentiles were calculated and compared to the main study sample.

Child Blood Pressure: Child blood pressure were assessed using the National Heart Blood and Lung Institute (NHBLI) blood pressure protocol.[22] Child blood pressure will be assessed by a trained data collector using an automated, calibrated CONTEC08A blood pressure monitor. Blood pressure systolic and diastolic z-scores and percentiles were calculated and compared to the main study sample.

Caregiver zBMI Height and Weight: Caregiver height and weight were self-reported via survey at Project SWEAT Main Study baseline (Appendix C: Demographic Survey). BMI was calculated from participant responses. Overall caregiver BMI mean and BMI category were calculated and compared to the main study sample.

HEAL MAPPS Contacts

Contact 1: Device Orientation and Project Orientation

Ten families were introduced to the HEAL MAPPS Oregon 650 via an orientation handout (Appendix K: HEAL MAPPS Project and Garmin Oregon 650 Orientation) with n=1-3 researchers present to explain the objectives of the project, the participant's role within the project, and functions of the Garmin Oregon 650. Participants were compensated with $20 to purchase food while on their routes.

MAPPing

Nine caregivers and their children (n=16) used the Garmin Oregon 650 together to map as many commonly traveled routes as desired over an average of 8.16 and 2.32 days at School 1 and School 2, respectively (Table 1). Participants took images of their facilitators and barriers to healthy eating and active living and were asked to photograph and any food purchases they made while on their routes.

Contact 2: In-Depth Interview

Nine caregivers and their children (n=13) (Table 1) participated in an audio recorded in-depth interview individually. Participants were asked to identify facilitators and barriers to healthy eating and active living within their images taken on their route with the HEAL MAPPS Route Journal (Appendix L: SWEAT HEAL MAPPS Route Journal). All information from route journals was coded and evaluated via Chi-square and t-test analyses.

Contact 3: Focus Groups

Focus Groups were conducted at each respective school site, with a separate focus group for caregivers and children. Caregivers were asked to discuss a series of questions/statements regarding their neighborhoods (Appendix M: Caregiver Focus Group Guide) with researchers (n=2) acting as a moderator and a field note taker. Children were asked to discuss their neighborhoods in their own focus group (Appendix N: Child Focus Group Guide), and to participate in an art engagement project to represent their neighborhoods.

Contact 4: Community Stakeholder Meeting Spring 2018

A meeting of MAPPers, community stakeholders, community leaders, and researchers will occur May 2018 to discuss improvements to participants' respective neighborhoods.

Data Analysis

Race and income level were self-reported and household food security score was evaluated via demographic survey (Appendix C: Demographic Survey). Participants were classified as black and non-black; black if their caregiver reported that they were African-American or both African-American and another race or ethnicity. Project SWEAT Main Study caregivers gave self-reported anthropometrics and biometrics (Appendix C: Demographic Survey) whereas children's measurements were recorded by Project SWEAT researchers

(Appendix J: Summer Weight Environment Assessment Trial (SWEAT) Child Anthropometric and Biometric Form).

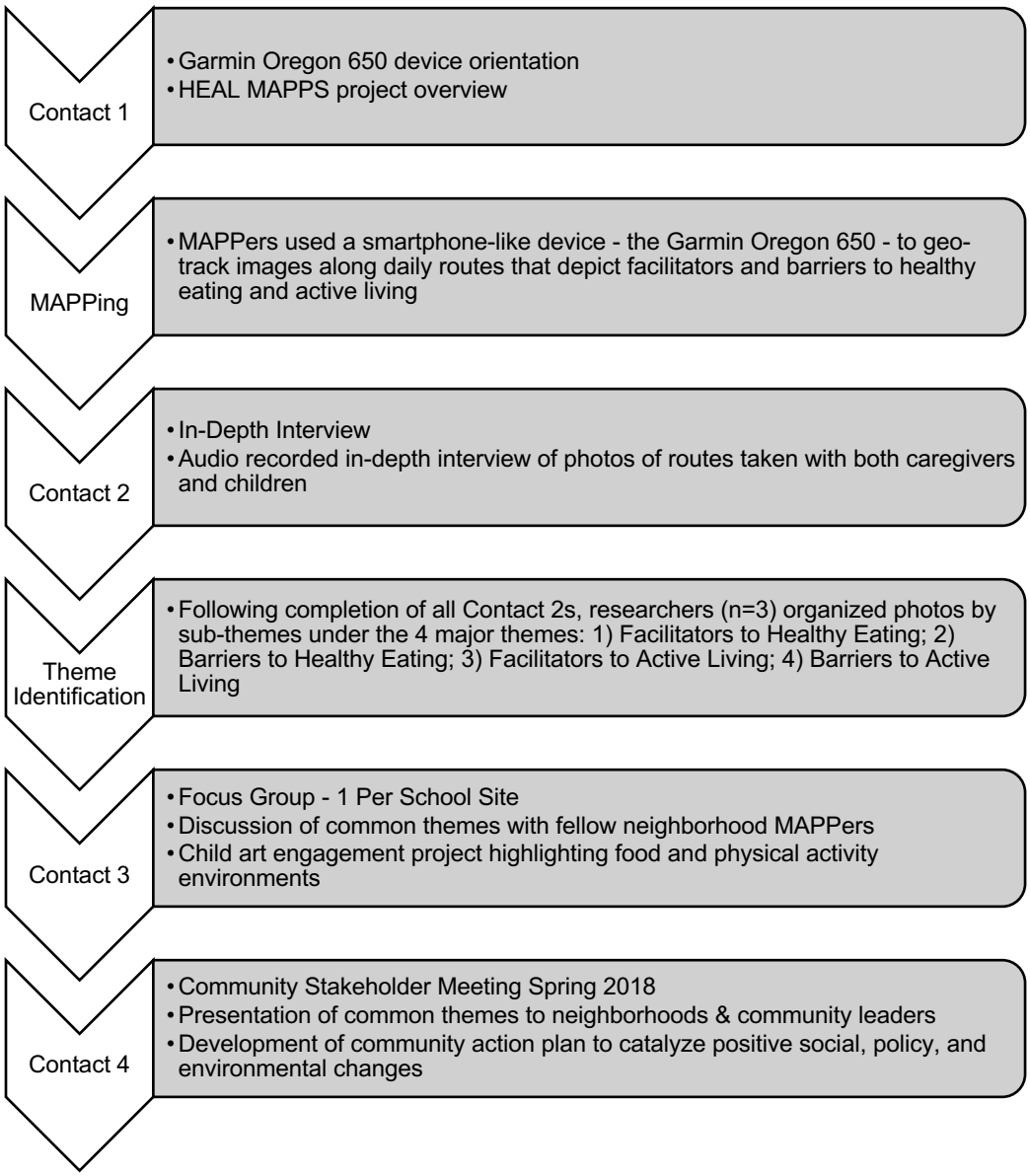
For household income, a binomial variable (low-income=0; non-low-income=1) was created. Annual household income data was collected categorically: a) <10,000; b) $10,001-20,000; c) $20,001-30,000; d) $30,001-40,000; e) $40,001-50,000; f) $50,001-60,000; g) $60,001-80,000; h) >$80,000. Based on responses to the annual household income question, participants were assigned an income-level based on the mid-point between the income range. For example, if a participant responded that their annual household income was between $10,001 and $20,000, they were assigned an income level of $15,000. This annual household income level was compared to the national poverty guidelines[23] and based on the number of individuals living in the household (Appendix C: Demographic Survey), participants were classified as low-income or non-low-income.

The characteristics – demographic, anthropometric, and biometric – of HEAL MAPPS sample of children (n=16) and caregivers (n=9) were compared to the Project SWEAT Main Study sample via T-tests and Chi-square analysis.[24]

Utilizing the Project SWEAT Route Journal (Appendix L: SWEAT HEAL MAPPS Route Journal) and participant responses, all photos were coded using a binomial variable describing the presence of facilitators and barriers to healthy eating and active living (facilitators=0; barriers=1). Data were tabulated, and Chi-square and T-test analyses were conducted to determine difference between child and caregiver characterizations and differences between schools.

Following completion of all Contacts 2, researchers (n=3) organized photos by sub-themes under the 4 major themes: 1) Facilitators to Healthy Eating; 2) Barriers to Healthy Eating; 3) Facilitators to Active Living; 4) Barriers to Active Living. Within each of the themes, several subthemes were identified (Table 6. Facilitators and Barriers to Healthy Eating and Active Living Themes).

Figure 1. Project SWEAT HEAL MAPPS Process



Chapter 3: Results

HEAL MAPPS Contact Details

Nine families living with in an approximate 1-mile radius of their school site were selected to participate. Caregivers (School 1: n=6, School 2 n=3) and their children (School 1: n=10, School 2 n=6) participated in Contact 1 and MAPPed common routes in their neighborhoods. Families took images of their facilitators and barriers with the Garmin Oregon 650 for an average of 8.16 days and 2.32 days at School 1 and School 2, respectively (Table 1).

Nine caregivers (School 1 n=6, School 2 n=3) and their 13 children participated in Contact 2 in-depth interviews (School 1: n=9, School 2: n=4) (Table 1). Twelve children participated in Contact 3 Focus Groups (School 1: n=7, School 2: n=5).

Table 1. MAPPer Characteristics

	School 1	**School 2**
Distance of Home from School (mile), Mean ± SE	0.55 ± 0.14	0.40 ± 0.20
Time with Garmin Oregon 650 (days), Mean ± SE	8.16 ± 4.28	2.32 ± 2.36
Participants per Family, Mean ± SE	2.50 ± 0.22	2.33 ± 0.22
Child Contact 2 Participants per Family, Mean ± SE	1.50 ± 0.33	1.33 ± 0.33

Participant Characteristics

Data indicated that the HEAL MAPPS child sample was representative of the Project SWEAT Main Study child sample (Table 2).

Table 2. Child Characteristics

	PS Main Study	HEAL MAPPS	P-value
zBMI[a], Mean ± SE	0.77 ± 0.10	0.80 ± 0.25	0.91
BMI Percentile[a], Mean ± SE	70.71 ± 2.54	71.77 ± 6.23	0.86
BMI Category[b], % (n)			
Grade 1 Thinness	1.83 (2)	6.25 (1)	
Normal	64.22 (70)	62.50 (10)	0.46
Overweight	22.02 (24)	25.00 (4)	
Obese	11.93 (13)	6.25 (1)	
Zwaist[a], Mean ± SE	0.51 ± 0.08	0.45 ± 0.24	0.78
zSBP[a], Mean ± SE	1.53 ± 0.11	1.29 ± 0.39	0.36
zDBP[a], Mean ± SE	0.97 ± 0.13	1.37 ± 0.40	0.19
Child Age[a] (years), Mean ± SE	7.10 ± 0.21	6.13 ± 0.54	0.05
Race[b], % (n)			
Black	79.65 (90)	87.50 (14)	0.40
Non-Black	20.35 (23)	12.50 (2)	
Low-Income[b], % (n)			
Low-Income	71.82 (79)	56.25 (9)	0.13
Non-Low-Income	28.18 (31)	43.75 (7)	
Household Food Security Score[a], Mean ± SE	1.88 ± 0.24	1.25 ± 0.44	0.28
Household Food Security Category[b], % (n)			
Very Low Food Security	18.58 (21)	12.50 (2)	0.80
Low Food Security	11.50 (13)	12.50 (2)	
High Food Security	69.91 (79)	75.00 (12)	

PS=Project SWEAT
[a]Ttest
[b]Chi[2]

Data indicated that the HEAL MAPPS caregiver sample was representative of the Project SWEAT Main Study caregiver sample (Table 3).

Table 3. Caregiver Characteristics

	PS Main Study	HEAL MAPPS	P-value
BMI[a], Mean ± SE	30.26 ± 0.95	33.24 ± 1.86	0.26
BMI Category[b], % (n)			
Grade 1 Thinness	3.90 (3)		
Normal	20.78 (16)	11.11 (1)	
Overweight	32.47 (25)	22.22 (2)	0.25
Obese Class I	18.18 (14)	22.22 (2)	
Obese Class II	16.88 (13)	44.44 (4)	
Morbidly Obese	7.79 (6)		
Caregiver Age[a] (years), Mean ± SE	34.69 ± 1.17	38.38 ± 2.43	0.28
Race[b], % (n)			
Black	78.21 (61)	77.78 (7)	0.97
Non-Black	21.79 (17)	22.22 (2)	
Low-Income[b], % (n)			
Low-Income	67.11 (51)	55.56 (5)	0.43
Non-Low-Income	32.89 (25)	44.44 (4)	
Household Food Security Score[a], Mean ± SE	1.68 ± 0.26	1.22 ± 0.57	0.53
Household Food Security Category[b], % (n)			
Very Low Food Security			
Low Food Security	14.10 (11)	11.11 (1)	0.94
High Food Security	12.82 (10)	11.11 (1)	
	73.08 (57)	77.78 (7)	
[a]Ttest [b]Chi[2]			

Contact 2: In-Depth Interview Perceptions

Overall and between the school sites, perceived barriers and facilitators to healthy eating and active living were evaluated amongst the caregivers and children. Children perceived their environments to have less barriers than their caregivers overall and among both school sites (**Error! Reference source not found.**).

Table 4. Perceptions of Environment by Caregiver and Child

	Caregiver	Child	P-value
Overall Healthy Eating Perceptions[a], % (n)			
No Barrier	30.99 (44)	67.47 (56)	p<0.01
Barrier	69.01 (98)	32.53 (27)	
Overall Active Living Perceptions[a], % (n)			
No Barrier	24.48 (35)	61.26 (68)	p<0.01
Barrier	75.52 (108)	38.74 (43)	
School 1 Healthy Eating Perceptions[a], % (n)			
No Barrier	24.53 (26)	66.67 (46)	p<0.01
Barrier	75.47 (80)	33.33 (23)	
School 1 Active Living Perceptions[a], % (n)			
No Barrier	24.80 (31)	55.79 (53)	p<0.01
Barrier	75.20 (94)	44.21 (42)	
School 2 Healthy Eating Perceptions[a], % (n)			
No Barrier	50.00 (18)	71.43 (10)	0.17
Barrier	50.00 (18)	28.57 (4)	
School 2 Active Living Perceptions[a], % (n)			
No Barrier	22.22 (4)	93.75 (15)	p<0.01
Barrier	77.78 (14)	6.25 (1)	

[a]Chi^2

Families took photos of their commonly mapped routes and identified barriers and facilitators to healthy eating and active living and were compared by school site amongst both caregivers and children. Perceptions were different among the sites (Table 5).

Table 5. Perceptions of Environment by School

	School 1	School 2	P-value
Mean Number of Photos Taken by Family[a], Mean ± SE	29.67 ± 10.30	14.00 ± 2.65	0.34
Caregiver Healthy Eating[b] Perception, (n)			
No Barrier	24.53 (26)	50.00 (18)	p<0.01
Barrier	75.47 (80)	50.00 (18)	
Caregiver Active Living Perception[b], (n)			
No Barrier	24.80 (31)	22.22 (4)	0.81
Barrier	75.20 (94)	77.78 (14)	
Child Healthy Eating[b] Perception, (n)			
No Barrier	66.67 (46)	71.43 (10)	0.73
Barrier	33.33 (23)	28.57 (4)	
Child Active Living Perception[b], (n)			
No Barrier	55.79 (53)	93.75 (15)	p<0.01
Barrier	44.21 (42)	6.25 (1)	
[a]Ttest [b]Chi^2			

Theme Identification

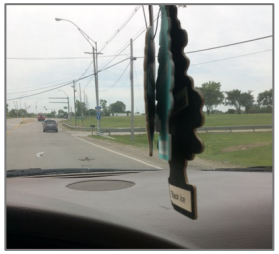
Subthemes of barriers and facilitators to healthy eating and active living (Table 6) were identified by researchers (n=3) before Contact 3 to help facilitate Contact 3 focus groups (Appendix M: Caregiver Focus Group Guide, Appendix N: Child Focus Group Guide).

Table 6. Facilitators and Barriers to Healthy Eating and Active Living Themes

	School 1	School 2
Facilitators to Healthy Eating	Family meal Community garden Accessibility to grocery store Fresh produce access  	Fresh produce available Presence of grocery store for family food shopping Healthy snacks in the home Infrastructure for family meals  
Barriers to Healthy Eating	Accessibility to unhealthy snacks Expired/poor quality of food  	Fatty foods  

continued

Table 10: Continued

Facilitators to Active Living	Presence of infrastructure for walking Neighborhood amenities Presence of green space/infrastructure  	Presence of sidewalks Built environment  
Barriers to Active Living	Dirty/untidy neighborhood space Abandoned lots/buildings Lack of safety/quality of living Poor/dangerous home/neighborhood living conditions Gentrification  	Barriers to crossing streets/ walking No bike lanes Abandoned buildings/lots  

Chapter 4: Discussion

Project SWEAT HEAL MAPPS aimed to discover the facilitators and barriers to healthy eating and physical activity utilizing visual and geographic mediums. Contact 1 provided the images in both visual and geographic mediums with their coordinates, whereas Contact 2 provided the opportunity to learn the context of the images. Participants shared their life experiences and activities of daily living by identifying locations that promote and hinder their ability to make healthy choices throughout the summer months throughout. Through the in-depth interviews, the research team gained valuable knowledge about access to healthy living in low-income, urban zip codes in Columbus, Ohio for children and adolescents during the summer months.

The photos of HEAL MAPPS gave insight into the perceptions of caregivers and children of the promoters and obstacles to healthy eating and physical activity for children and adolescents in visual and geographic mediums. Several findings were evident: the HEAL MAPPS sample of participants was representative of Project SWEAT main study participants for both caregivers and children, children perceived their food and physical activity environments differently than their caregivers, and the disparities in access to healthy food and safe exercise were different among the two school sites.

When comparing children of the anthropometrics and biometrics from the main study to the HEAL MAPPS sample, results indicated that our HEAL MAPPS sample was representative of the main study sample across zBMI score, BMI percentile Zwaist, zSBP, and zDBP. This indicated that the HEAL MAPPS

sample was representative of the Project SWEAT main study in anthropometrics and biometrics.

Child demographics were also evaluated among age, race, income level, and household food security. The average age of children, race, income level, and household food security level indicated that the child HEAL MAPPS sample was once again representative of the main study sample, indicating that overall the HEAL MAPPS sample was representative of all participants across both school sites.

Caregivers of the HEAL MAPPS sample were compared similarly as their children to their respective main study participants. It is important to note that the caregiver anthropometrics were self-reported (Appendix C: Demographic Survey). The p-values for all biometrics and anthropometrics of caregivers reflect that the HEAL MAPPS sample was a representative sample of the main study. Caregivers were also evaluated via demographics the same as their children via demographic survey (Appendix C: Demographic Survey) and found that among age, race, income, and household food security, the HEAL MAPPS sample was representative of the main study sample.

Another consistent finding among school sites was that children among both school sites perceived their environment to have less barriers to healthy eating and active living than their caregivers. Looking specifically among each of the sites, School 1 children considered their food and physical activity environments to have less barriers than their caregivers identified. School 2 children considered their healthy eating environment better than their caregivers

(71.43% to 50.00%), though perceptions of their active living environment were drastically different, children only identifying 6.25% of images to indicate barriers to safe play, whereas their caregivers saw interpreted 77.78% of images to have barriers. A possibility in this discrepancy is that the sample of children at School 2 were younger than their School 1 counterparts and may have had difficulty in identifying barriers and facilitators of the images that were recorded.

Within the literature, African-American caregivers of children 3-11 years of age have noted that their food environments are marketed toward supporting unhealthy eating practices, and this may create additional barriers in creating healthy eating environments African-American youth.[25] Though food may be marketed towards unhealthy eating practices, caregiver perceptions of cost of fruits and vegetables may also hinder caregiver and children's ability to make healthy food choices providing a healthy food environment in their home.[26]

Among physical activity, caregivers recognize the importance of incorporating physical activity into their children's lives, and have specifically identified the importance of a safe environment to do so in. Caregivers have shared that if a neighborhood was unsafe, they would not allow their children to play outside.[27]

Among children, there is no known literature on perceptions of their environment, nor in comparison to their caregiver's perceptions. It is a possibility that children may not be able to identify barriers readily as their caregivers to healthy eating and active living due to their age. Knowing that children have not been exposed to as many years of life and environments, they may not be aware

of the challenges they face when their perceptions are compared to their respective caregivers.

This study is the first known application of HEAL MAPPS protocol[17,28] engaging caregivers and children in an urban environment specifically exploring the summertime widow of risk. Across the two sites, there were significant differences in perceptions of their food and physical activity environments, indicating that interventions focused on improving environments must be tailored to respective communities. This main finding is consistent throughout: though the two sites were both low-income, urban zip codes and within 2.1 miles of each other, the disparities in access to healthy eating and physical activity were different and their interventions must be treated as such.

While School 2 is more economically disadvantaged School 1 (based on anecdotal observations of the researchers), they reported less instances of barriers to healthy eating. It is possible that their perception of their environment was affected by a sample size of only 3 families, whereas school site 1 had 6 families in their sample. Caregivers among both sites identified barriers to active living in their neighborhoods. The children had similar perceptions in identifying less barriers to healthy eating at their respective school site, whereas School 1 children identified several more barriers than School 2 children (44.21% to 6.25%).

In identifying these themes as researchers there are significant differences among the subthemes related to barriers and facilitators to healthy eating and active living. School 1 had access to community centers, and green space,

whereas School 2 only had the presence of sidewalks and a city infrastructure for movement. Both school sites cited the absence of accessible sidewalks, whether not present or in poor condition. Among healthy eating, School 1 had access to a community garden, and both schools cited access to a grocery store and access to infrastructure for healthy meals.

Chapter 5: Conclusion

Adapting the HEAL MAPPS methodology for Project SWEAT provided valuable visual insight into the facilitators and barriers to healthy eating and active living for children and adolescents face in underserved, urban communities during the summer months. Learning of these visual and geographic determinants, changes can be made to protect against the summer window of risk for unhealthy weight gain.[3,4] Both sites indicated significant differences in their barriers and facilitators to healthy eating and active living, (School Site 1: Healthy Eating Facilitators: family meal, community garden, accessibility to grocery store, fresh produce; Healthy Eating Barriers: accessibility to unhealthy snacks, expired/poor quality food: Active Living Facilitators: presence of infrastructure for walking, neighborhood amenities; presence of green space/infrastructure; Active Living Barriers: dirty/untidy neighborhood space; barriers to walking; abandoned lots/buildings, lack of safety/quality of living, poor/dangerous home/neighborhood living conditions, gentrification; School Site 2: Healthy Eating Facilitators: fresh produce available, presence of grocery store for family food shopping, healthy snacks in the home, infrastructure for family meals; Healthy Eating Barriers: fatty foods; Active Living Facilitators: presence of sidewalks, built environment; Active Living Barriers: barriers to crossing streets/walking safely, no bike lanes, abandoned buildings/lots). The findings from the images and their perceptions indicate a need for a distinct intervention among both schools, and interventions should be tailored to reflect the communities' respective needs.

This information should be used by local- and state-level stakeholders to improve low-income neighborhood environments in Columbus, Ohio to promote healthy eating and active living during summer months. Future efforts should be directed toward learning more about food and physical activity environments across rural and suburban sites and other minorities disproportionately affected by childhood obesity[5–9] to improve the food and physical activity environments during the summer months for children and communities everywhere.

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Appendices

Appendix A: Main Study Caregiver Consent

The Ohio State University
Caregiver Consent to Participate in Research
SWEAT Sub-Study

Study Title: Summer Weight and Environmental Assessment Trial (SWEAT)

Researcher: Dr. Carolyn Gunther

Sponsor: OSU Impact and Engagement Grant

This is a consent form for research participation.
It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.
Please consider the information carefully. Feel free to ask questions before making a decision for you and your c h i l d whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The purpose of the SWEAT program is to learn about what kids are doing during the summer months. The SWEAT research team is interested in knowing what children are eating during the summer and what activities they are participating in and how these two things may affect their health. We want to compare summer months to school year months.

Procedures/Tasks:
In addition to the health information that we collect from your child and the demographic information that we collect from you as part of the main SWEAT study, we are asking to work with you to collect more in-depth information about what your child does during the summer months. We are hoping to capture information about your child eats and what activities they do at three time points throughout the summer – the beginning, middle, and end of the summer. Additionally, we will ask to meet with you at one other time point to discuss aspects of your community's environment that promote or inhibit healthy eating and physical activity for your child in a focus group format. Prior to these time points, we will ask to sit down with you for approximately 30-45 minutes to complete an orientation about the project with you.

We will ask to meet with you three times throughout the summer to complete surveys about your home food and physical activity environment. These interviews should last about 1 – 1 ½ hours. The interviews will be audio-recorded. Again, these will occur at three times throughout the summer – beginning, middle, and end. Your child may be asked to wear an accelerometer device for up to seven days at these time points. This device is a small device similar to a pedometer that allows us to track their physical activity.

Additionally, at one other time point throughout the summer, we will ask your child, with your assistance, to take photos of food and physical activity "paths" normally followed during the summer for two days. For example, this would include their commute to the recreation center or to a corner store to buy food. Specifically, we want to capture things in the community that help promote or interfere with healthy eating or physical activity. For example, if there is not a sidewalk from your home to the rec center, which makes it difficult for your child to walk there. You will receive $20 to spend on any food that you purchase while photographing your paths and routines. We will then ask to meet with you and your child for about 1 hour in a focus group format to discuss the photographs. This meeting will also be audio recorded.

All identifying information will be removed from the surveys. For participating in the more in-depth portion of the SWEAT study you will receive a total of $125 in gift cards and a COSI pass. For the first two information collection visits you will receive a $25 gift card at the first visit and a $50 gift card at the second visit to [INSERT where – Kroger, Walmart, Target, Amazon.com, etc.]. At the final information collection visit, you will receive a $50 gift card and a COSI pass that allows up to 8 individuals to attend COSI one time.

Duration:
An orientation to the project will take approximately 30-45 minutes. After each of the time periods (beginning, middle, and end of the summer), we will ask to sit down with you and your child for approximately 1 - 1 ½ - 2 hours to complete the surveys. When your child and you take the photographs, taking and sending these photographs will minimally impact their normal routines throughout the day. Our meeting to discuss the photographs should take approximately 1 hour.

Risks and Benefits:
There are no known risks to this study. The benefits are that you can receive information pertaining to your child's health – height, weight, blood pressure, and waist circumference.

Confidentiality:
Efforts will be made to keep you and your child's study-related information confidential. While we ask other group participants to keep the discussion in the group confidential, we cannot guarantee this. Please keep this in mind when choosing what to share in the group setting. There may be circumstances where this information must be released. For example, personal information regarding

your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):
Office for Human Research Protections or other federal, state, or international regulatory agencies;
The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

Participant Rights:
You, or your child, may refuse to participate in this study at any time. If you are a student or employee at Ohio State, your decision will not affect your relationship with Ohio State University.

If you choose to allow your child to participate in the study, you may discontinue participation at any time without penalty. By signing this form, you do not give up any personal legal rights you, or your child, may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The Ohio State University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions, concerns, or complaints about the study, or if you feel that you or your child were harmed as a result of your participation in this study, you may contact Dr. Carolyn Gunther at gunther.22@osu.edu.

For questions about you or your child's rights as a participant in this study, or to discuss other study-related concerns or complaints with someone who is not a member of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the parental permission form
I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my child to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my child to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Investigator/Research Staff [TO BE COMPLETED BY SWEAT RESEARCH TEAM]

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent from the SWEAT Research Team	**Signature of person obtaining consent from the SWEAT Research Team**
	AM/PM
	Date and time

Appendix B: Main Study Caregiver Permission

The Ohio State University
Caregiver Permission to Participate in Research
SWEAT Main Study

Study Title: Summer Weight and Environmental Assessment Trial (SWEAT)

Researcher: Dr. Carolyn Gunther

Sponsor: OSU Impact and Engagement Grant

This is a caregiver permission form for research participation.
It contains important information about this study and what to expect if you decide to allow your child to participate.

Your participation is voluntary.
Please consider the information carefully. Feel free to ask questions before making a decision for you and your child whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The purpose of the SWEAT program is to learn about what kids are doing during the summer months. The SWEAT research team is interested in knowing what children are eating during the summer and what activities they are participating in and how these two things may affect their health. We want to compare summer months to school year months.

Procedures/Tasks:
The SWEAT research team will collect health information (height, weight, blood pressure, and waist circumference) from your child three times. These three times include the end of the current school year, the beginning of next school year, and three months into next school year. All of this information will be collected at your child's school. If we are unable to collect this information at the school, we will contact you to ask to collect the information from your child at your home or at another community location.

In addition to information about your child, the SWEAT research team asks for you to complete a SWEAT Demographic Survey (attached). This survey contains demographic and household questions. We will only ask you to complete this information once.

All identifying information will be removed from the surveys. For completing this caregiver permission form, the attached consent form, and the attached SWEAT Demographic survey, you will receive a $5 gift card to [INSERT where – Kroger, Walmart, Target, Amazon.com, etc.]. If your child agrees to have their health measure taken, they will receive an Ohio State University wristband.

If you choose to participate in this study, you may be contacted and asked to participate in a more in-depth portion of this study. By signing this form, you are in no way committing to participate in the more in-depth portion of the study. We will simply contact you, via telephone or email, and ask to speak to you more about the more in-depth portion of the study.

Duration:
Each of the three sessions where we take your child's health measures will take approximately 10 minutes. Your completion of the attached SWEAT Demographic Survey should take no more than 10-15 minutes.

Risks and Benefits:
There are no known risks to this study. The benefits are that you can receive information pertaining to your child's health – height, weight, blood pressure, and waist circumference.

Confidentiality:
Efforts will be made to keep you and your child's study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):
Office for Human Research Protections or other federal, state, or international regulatory agencies;
The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

Participant Rights:
You, or your child, may refuse to participate in this study at any time. If you are a student or employee at Ohio State, your decision will not affect your relationship with Ohio State University.

If you choose to allow your child to participate in the study, you may discontinue participation at any time without penalty. By signing this form, you do not give up any personal legal rights you, or your child, may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The Ohio State University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions, concerns, or complaints about the study, or if you feel that you or your child were harmed as a result of your participation in this study, you may contact Dr. Carolyn Gunther at gunther.22@osu.edu.

For questions about you or your child's rights as a participant in this study, or to discuss other study-related concerns or complaints with someone who is not a member of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the parental permission form
I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my child to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my child to participate in this study.

Printed name of Child

Printed name of Caregiver | **Signature of Caregiver**

Relationship to the child | **Date and time** **AM/PM**

Phone Number #1 | **Phone Number #2**

Investigator/Research Staff [TO BE COMPLETED BY SWEAT RESEARCH TEAM]

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent from the SWEAT Research Team	**Signature of person obtaining consent from the SWEAT Research Team**
	AM/PM
	Date and time

Appendix C: Demographic Survey

Project SWEAT 2017 Demographic Survey

If you have more than one child at [SCHOOL], each child should bring home this form. Please fill-out the ENTIRE form for one child and only the red questions/sections (Your Name, Your Address, and Section 2: Child Information) for the rest of your children, so you do not have to fill-out the same information multiple times. Thank you!

Section 1: Contact Information

1. **Your Name:**_____

2. **Relationship to Child(ren):**

☐ Mother
☐ Father
☐ Other:_____

3. **Child(ren) Name(s) at [SCHOOL]:**

Name	*Grade*
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

4. **Your Phone Number:**

Phone #1:_____

Phone #2:_____

5. **Your Home Address:**

_____

6. **Your Email Address:**

_____

Section 2: Child Information [Please fill-out for EACH child]

7. **Child's Name:**_____

8. **Child's Birthdate:** _____

9. **In what grade will your child be *NEXT YEAR*?**

10. **What is your child's gender?** ☐ Male ☐ Female

11. **What is your child's ethnicity? (check one box)**

☐ Hispanic or Latino
☐ Not Hispanic or Latino

12. **What is your child's race? (check all that apply)**

☐ Black/African American ☐ Alaska Native/AI
☐ White/Caucasian ☐ Hawaiian/PI
☐ Asian ☐ Other:_____

13. **Do you plan to send your child to summer camp?**

☐ Yes
☐ No, skip to Question #16

14. **If YES, what is the name of the camp/where is it located?**_____

15. **How often do you think your child will attend?**

☐ Almost every day this summer
☐ Only one or two days per week
☐ Only one or two weeks

16. **Can we send you a weekly text message this summer to ask how many days your child attended or did not attend a program/camp? *Note: Standard text messaging rates will apply.***

☐ Yes, Phone Number(s): _____
☐ No

Section 3: Your Information [Only need to fill-out on ONE child's form]

17. What is your race? *(check all that apply)*
- ☐ Black/African American
- ☐ White/Caucasian
- ☐ Alaska Native/ American Indian
- ☐ Hawaiian/Pacific Islander
- ☐ Other:_____

18. What is your ethnicity? *(check only one box)*
- ☐ Hispanic/Latino
- ☐ Non Hispanic/Latino

19. What is your age? _____

20. What is your gender?
- ☐ Male
- ☐ Female

21. What is your current marital status?
- ☐ Married
- ☐ Single; Never married
- ☐ Cohabitating Partner/Significant Other
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

22. How many adults over the age of 18, counting yourself, live in your home? ____

23. How many children under the age of 18 live in your household? ____

24. In summer, does your house use air conditioning?
- ☐ Yes *What temp.?* _____
- ☐ No

25. Over the past 7 days how many times (0-7) did all or most of your family eat dinner together? _____

26. What is your highest level of formal education?
- ☐ Have not completed high school
- ☐ Received high school diploma or GED
- ☐ Some college or technical school
- ☐ 4-year college degree or advanced degree

27. What is your current employment status?
- ☐ Employed Full-Time
- ☐ Employed Part-Time
- ☐ Employed Seasonally
- ☐ Homemaker
- ☐ Unemployed
- ☐ Unemployed & Seeking Work
- ☐ Retired
- ☐ Disabled

28. In which range is your yearly household income?
- ☐ <$10,000
- ☐ $10,001-20,000
- ☐ $20,001-30,000
- ☐ $30,001-40,000
- ☐ $40,001-50,000
- ☐ $50,001-60,000
- ☐ $60,001-80,000
- ☐ >$80,001

29. Do you know your yearly household income more specifically? If so, what i it?

30. Does your family receive SNAP/Food Stamps?
- ☐ Yes, On what day of the month? _____
- ☐ No

31. Does your family receive WIC?
- ☐ Yes, How often do you receive them? _____
- ☐ No

32. Your Height: _____**Ft.** ____**Inches**

33. Your Weight _____ **pounds**

Section 4. Household Food Information [Only need to fill-out on ONE child's form]

Below are six statements that people have made about their food situation. For these statements, please check whether the statement was <u>often</u> true, <u>sometimes</u> true, or <u>never</u> true for you and your family in the last 12 months—that is, since last May.

34. The first statement is, "The food that we bought just didn't last, and we didn't have money to get more." Was that <u>often</u>, <u>sometimes</u>, or <u>never</u> true for your family in the last 12 months?

- ☐ Often True
- ☐ Sometimes True
- ☐ Never True
- ☐ Don't Know/Refuse to Respond

35. "We couldn't afford to eat balanced meals." Was that <u>often</u>, <u>sometimes</u>, or <u>never</u> true for your family in the last 12 months?

- ☐ Often True
- ☐ Sometimes True
- ☐ Never True
- ☐ Don't Know/Refuse to Respond

36. In the last 12 months, since last May, did you or any other adults in your family ever cut the size of your meals or skip meals because there wasn't enough money for food?

- ☐ Yes
- ☐ No ***<u>(If NO, skip to Question 38)</u>***
- ☐ Don't Know/Refuse to Respond

37. *<u>If YES to Question 36,</u>* how often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- ☐ Almost every month
- ☐ Some months but not every month
- ☐ Only 1 or 2 months
- ☐ Don't know

38. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ Don't Know/Refuse to Respond

39. In the last 12 months, were you every hungry but didn't eat because there wasn't enough money for food?

- ☐ Yes
- ☐ No
- ☐ Don't Know/Refuse to Respond

Appendix D: Main Study Child Assent

The Ohio State University
Child Assent to Participate in Research
SWEAT Main Study

Study Title: Summer Weight and Environmental Assessment Trial (SWEAT)

Researcher: **Dr. Carolyn Gunther**

Sponsor: OSU Impact and Engagement Grant

You are being asked to be in a research study. Studies are done to find better ways to treat people or to understand things better.

This form will tell you about the study to help you decide whether or not you want to participate.

You should ask any questions you have before making up your mind. You can think about it and discuss it with your family or friends before you decide.

It is okay to say "No" if you don't want to be in the study. If you say "Yes" you can change your mind and quit being in the study at any time without getting in trouble.

If you decide you want to be in the study, an adult (usually a parent) will also need to give permission for you to be in the study.

What is this study about?

The purpose of the SWEAT program is to learn about what kids are doing during the summer months. The SWEAT research team is interested in knowing what children are eating during the summer and what activities they are participating in and how these two things may affect their health. We want to compare summer months to school year months.

What will I need to do if I am in this study?

The SWEAT research team will collect health information (height, weight, blood pressure, and waist circumference) from you three times. These three times include the end of the current school year, the beginning of next school year, and three months into next school year. All of this information will be collected at your school. If we are unable to collect this information at the school, we will

contact your caregiver to ask to collect the information from you at your home or at another community location.

How long will I be in the study?

The SWEAT study will last approximately 8 months, from the end of this school year through about 3 months into the next school year.

Can I stop being in the study?

You may stop being in the study at any time.

What bad things might happen to me if I am in the study?

This study has minimal risks. If you feel uncomfortable at anytime, you may stop being in the study.

What good things might happen to me if I am in the study?

From this study you may learn a little bit about your health.

Will I be given anything for being in this study?

For participating in the program, you will receive and Ohio State University wristband.

Who can I talk to about the study?

If you have any questions or want to talk to someone about our SWEAT project, you should talk to Dr. Carolyn Gunther at gunther.22@osu.edu.

If you have any questions or want to talk to someone about our SWEAT project that is not in charge of the project, you should talk to Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the Child Assent Form

Printed name of Child

Signature of Child

AM/PM

Date and time

Investigator/Research Staff [TO BE COMPLETED BY SWEAT RESEARCH TEAM]

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent from the SWEAT Research Team	**Signature of person obtaining consent from the SWEAT Research Team**

This form must be accompanied by an IRB approved parental permission form signed by a parent/guardian.

Appendix E: Sub-Study Caregiver Permission Form

The Ohio State University
Caregiver Permission to Participate in Research
SWEAT Sub-Study

Study Title: Summer Weight and Environmental Assessment Trial (SWEAT)

Researcher: Dr. Carolyn Gunther

Sponsor: OSU Impact and Engagement Grant

This is a caregiver permission form for research participation.
It contains important information about this study and what to expect if you decide to allow your child to participate.

Your participation is voluntary.
Please consider the information carefully. Feel free to ask questions before making a decision for you and your c h i l d whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The purpose of the SWEAT program is to learn about what kids are doing during the summer months. The SWEAT research team is interested in knowing what children are eating during the summer and what activities they are participating in and how these two things may affect their health. We want to compare summer months to school year months.

Procedures/Tasks:
In addition to the health information that we collect from your child and the demographic information that we collect from you as part of the main SWEAT study, we are asking to work with you to collect more in-depth information about what your child does during the summer months. We are hoping to capture information about your child eats and what activities they do at three time points throughout the summer – the beginning, middle, and end of the summer. Additionally, we will ask to meet with you at one other time point in a focus group format to discuss aspects of your community's environment that promote or inhibit healthy eating and physical activity for your child. Prior to these time points, we will ask to sit down with you for approximately 30-45 minutes to complete an orientation about the project with you.

We will ask to meet with you three times throughout the summer to complete surveys about your home food and physical activity environment. These interviews should last about 1 - 1 ½. The interviews will be audio-recorded. Again, these will occur at three times throughout the summer – beginning, middle, and end. Your child may be asked to wear an accelerometer device for up to seven days at these time points. This device is a small device similar to a pedometer that allows us to track their physical activity.

Additionally, at one other time point throughout the summer, we will ask your child, with your assistance, to take photos of food and physical activity "paths" normally followed during the summer for two days. For example, this would include their commute to the recreation center or to a corner store to buy food. Specifically, we want to capture things in the community that help promote or interfere with healthy eating or physical activity. For example, if there is not a sidewalk from your home to the rec center, which makes it difficult for your child to walk there. You will receive $20 to spend on any food that you purchase while photographing your paths and routines. We will then ask to meet with you and your child in a focus group format for about 1 hour to discuss the photographs. This meeting will also be audio recorded.

All identifying information will be removed from the surveys. For participating in the more in-depth portion of the SWEAT study you will receive a total of $125 in gift cards and a COSI pass. For the first two information collection visits you will receive a $25 gift card at the first visit and a $50 gift card at the second visit to [INSERT where – Kroger, Walmart, Target, Amazon.com, etc.]. At the final information collection visit, you will receive a $50 gift card and a COSI pass that allows up to 8 individuals to attend COSI one time.

Duration:
An orientation to the project will take approximately 30-45 minutes. Taking and sending these photographs will minimally impact their normal routines throughout the day. After each of the time periods (beginning, middle, and end of the summer), we will ask to sit down with you and your child for approximately 1 - 1 ½ hours to complete surveys. When your child and you take the photographs, taking and sending these photographs will minimally impact their normal routines throughout the day. Our meeting to discuss the photographs should take approximately 1 hour.

Risks and Benefits:
There are no known risks to this study. The benefits are that you can receive information pertaining to your child's health – height, weight, blood pressure, and waist circumference.

Confidentiality:
Efforts will be made to keep you and your child's study-related information confidential. While we ask other group participants to keep the discussion in the group confidential, we cannot guarantee this. Please keep this in mind when

choosing what to share in the group setting. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):
Office for Human Research Protections or other federal, state, or international regulatory agencies;
The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

Participant Rights:
You, or your child, may refuse to participate in this study at any time. If you are a student or employee at Ohio State, your decision will not affect your relationship with Ohio State University.

If you choose to allow your child to participate in the study, you may discontinue participation at any time without penalty. By signing this form, you do not give up any personal legal rights you, or your child, may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The Ohio State University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions, concerns, or complaints about the study, or if you feel that you or your child were harmed as a result of your participation in this study, you may contact Dr. Carolyn Gunther at gunther.22@osu.edu.

For questions about you or your child's rights as a participant in this study, or to discuss other study-related concerns or complaints with someone who is not a member of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the parental permission form
I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my child to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my child to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Printed name of Child

Printed name of Caregiver

Signature of Caregiver

Relationship to the child

Date and time **AM/PM**

Phone Number #1

Phone Number #2

<u>Investigator/Research Staff [TO BE COMPLETED BY SWEAT RESEARCH TEAM]</u>

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent from the SWEAT Research Team

Signature of person obtaining consent from the SWEAT Research Team

Date and time **AM/PM**

Appendix F: Sub-Study Caregiver Consent

The Ohio State University
Caregiver Consent to Participate in Research
SWEAT Sub-Study

Study Title: Summer Weight and Environmental Assessment Trial (SWEAT)

Researcher: Dr. Carolyn Gunther

Sponsor: OSU Impact and Engagement Grant

This is a consent form for research participation.
It contains important information about this study and what to expect if you decide to participate.

Your participation is voluntary.
Please consider the information carefully. Feel free to ask questions before making a decision for you and your c h i l d whether or not to participate. If you decide to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:
The purpose of the SWEAT program is to learn about what kids are doing during the summer months. The SWEAT research team is interested in knowing what children are eating during the summer and what activities they are participating in and how these two things may affect their health. We want to compare summer months to school year months.

Procedures/Tasks:
In addition to the health information that we collect from your child and the demographic information that we collect from you as part of the main SWEAT study, we are asking to work with you to collect more in-depth information about what your child does during the summer months. We are hoping to capture information about your child eats and what activities they do at three time points throughout the summer – the beginning, middle, and end of the summer. Additionally, we will ask to meet with you at one other time point to discuss aspects of your community's environment that promote or inhibit healthy eating and physical activity for your child in a focus group format. Prior to these time points, we will ask to sit down with you for approximately 30-45 minutes to complete an orientation about the project with you.

We will ask to meet with you three times throughout the summer to complete surveys about your home food and physical activity environment. These interviews should last about 1 – 1 ½ hours. The interviews will be audio-recorded. Again, these will occur at three times throughout the summer – beginning, middle, and end. Your child may be asked to wear an accelerometer device for up to seven days at these time points. This device is a small device similar to a pedometer that allows us to track their physical activity.

Additionally, at one other time point throughout the summer, we will ask your child, with your assistance, to take photos of food and physical activity "paths" normally followed during the summer for two days. For example, this would include their commute to the recreation center or to a corner store to buy food. Specifically, we want to capture things in the community that help promote or interfere with healthy eating or physical activity. For example, if there is not a sidewalk from your home to the rec center, which makes it difficult for your child to walk there. You will receive $20 to spend on any food that you purchase while photographing your paths and routines. We will then ask to meet with you and your child for about 1 hour in a focus group format to discuss the photographs. This meeting will also be audio recorded.

All identifying information will be removed from the surveys. For participating in the more in-depth portion of the SWEAT study you will receive a total of $125 in gift cards and a COSI pass. For the first two information collection visits you will receive a $25 gift card at the first visit and a $50 gift card at the second visit to [INSERT where – Kroger, Walmart, Target, Amazon.com, etc.]. At the final information collection visit, you will receive a $50 gift card and a COSI pass that allows up to 8 individuals to attend COSI one time.

Duration:
An orientation to the project will take approximately 30-45 minutes. After each of the time periods (beginning, middle, and end of the summer), we will ask to sit down with you and your child for approximately 1 - 1 ½ - 2 hours to complete the surveys. When your child and you take the photographs, taking and sending these photographs will minimally impact their normal routines throughout the day. Our meeting to discuss the photographs should take approximately 1 hour.

Risks and Benefits:
There are no known risks to this study. The benefits are that you can receive information pertaining to your child's health – height, weight, blood pressure, and waist circumference.

Confidentiality:
Efforts will be made to keep you and your child's study-related information confidential. While we ask other group participants to keep the discussion in the group confidential, we cannot guarantee this. Please keep this in mind when choosing what to share in the group setting. There may be circumstances where this information must be released. For example, personal information regarding

your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research):
Office for Human Research Protections or other federal, state, or international regulatory agencies;
The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

Participant Rights:
You, or your child, may refuse to participate in this study at any time. If you are a student or employee at Ohio State, your decision will not affect your relationship with Ohio State University.

If you choose to allow your child to participate in the study, you may discontinue participation at any time without penalty. By signing this form, you do not give up any personal legal rights you, or your child, may have as a participant in this study.

An Institutional Review Board responsible for human subjects research at The Ohio State University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:
For questions, concerns, or complaints about the study, or if you feel that you or your child were harmed as a result of your participation in this study, you may contact Dr. Carolyn Gunther at gunther.22@osu.edu.

For questions about you or your child's rights as a participant in this study, or to discuss other study-related concerns or complaints with someone who is not a member of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the parental permission form
I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my child to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my child to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Investigator/Research Staff [TO BE COMPLETED BY SWEAT RESEARCH TEAM]

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent from the SWEAT Research Team	**Signature of person obtaining consent from the SWEAT Research Team**
	AM/PM
	Date and time

Appendix G: Sub-Study Child Assent Form

The Ohio State University
Child Assent to Participate in Research
SWEAT Sub-Study

Study Title: Summer Weight and Environmental Assessment Trial (SWEAT)

Researcher: Dr. Carolyn Gunther

Sponsor: OSU Impact and Engagement Grant

You are being asked to be in a research study. Studies are done to find better ways to treat people or to understand things better.

This form will tell you about the study to help you decide whether or not you want to participate.

You should ask any questions you have before making up your mind. You can think about it and discuss it with your family or friends before you decide.

It is okay to say "No" if you don't want to be in the study. If you say "Yes" you can change your mind and quit being in the study at any time without getting in trouble.

If you decide you want to be in the study, an adult (usually a parent) will also need to give permission for you to be in the study.

What is this study about?

The purpose of the SWEAT program is to learn about what kids are doing during the summer months. The SWEAT research team is interested in knowing what children are eating during the summer and what activities they are participating in and how these two things may affect their health. We want to compare summer months to school year months.

What will I need to do if I am in this study?

In addition to the health information that we collect from you as part of the main SWEAT study, we are asking to work with you to collect more i information about what you do during the summer months. We are hoping to get information about what you eat and what activities you do at three time points throughout the summer – the beginning, middle, and end of the summer. Prior to these three

time points, we will ask to sit down with you and your caregiver for approximately 30-45 minutes to complete an orientation about the project with you.

At three times this summer, we will ask you to do some surveys with us. Your surveys should only take about 15 minutes, but your parent/caregiver's surveys will take about 1 – 1 ½ hours. The interviews will be audio-recorded. Again, these will occur at three times throughout the summer – beginning, middle, and end. You may be asked to wear an accelerometer device for up to seven days at these time points. This device is a small device similar to a pedometer that allows us to track your physical activity.

Additionally, one other time throughout the summer we are going to give you a device that you can take photos with. We are going to ask you to do things with food and physical activity or exercise that you normally do during the summer, such as going to the rec center in your neighborhood or going to the corner store to buy food. While you do these things, we want you to take pictures of things that help or stop you from doing these things. For example, if you want to walk to the rec center but you can't because there is not a sidewalk. We want you to take pictures of things like that. You will take pictures for two days. You will get $20 to spend on any food that you buy while taking pictures. Then we will ask to meet with you again with a group of other kids and parents. This time, we will bring the photos you took and ask you to talk to us about them for about an hour. Your parent or caregiver will also be there to help.

How long will I be in the study?

The main SWEAT study will last approximately 8 months, from the end of this school year through about 3 months into the next school year. We will only be working with you to collect these photographs and information through this summer.

Can I stop being in the study?

You may stop being in the study at any time.

What bad things might happen to me if I am in the study?

This study has minimal risks. If you feel uncomfortable at anytime, you may stop being in the study. In the group meeting we will ask other kids and parents not to repeat anything you say, but we cannot guarantee this. Please keep this in mind when choosing what to share in the group setting

What good things might happen to me if I am in the study?

From this study you may learn a little bit about your health.

Will I be given anything for being in this study?

For participating in the main SWET program, you will receive and Ohio State University wristband. For participating in the more in-depth portion of the SWEAT study your family will receive a total of $125 in gift cards and A COSI pass. For the first two information collection visits your family will receive a $25 and $50 to [INSERT where – Kroger, Walmart, Target, Amazon.com, etc.]. At the final information collection visit, your family will receive a $50 gift card and a COSI pass that allows up to 8 individuals to attend COSI one time.

Who can I talk to about the study?

If you have any questions or want to talk to someone about our SWEAT project, you should talk to Dr. Carolyn Gunther at gunther.22@osu.edu.

If you have any questions or want to talk to someone about our SWEAT project that is not in charge of the project, you should talk to Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251.

Signing the Child Assent Form

_____

Printed name of Child

_____

Signature of Child

_____ **AM/PM**

Date and time

Investigator/Research Staff [TO BE COMPLETED BY SWEAT RESEARCH TEAM]

I have explained the research to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent from the SWEAT Research Team	**Signature of person obtaining consent from the SWEAT Research Team**

This form must be accompanied by an IRB approved parental permission form signed by a parent/guardian.

Appendix H: Media Consent Form

SWEAT Media Consent Form

Please print:

Name of Child: _____

Name of Adult: _____

Address: _____

Phone Number: _____

Please read the following:

I am 18 years of age or older and hereby give my permission to SWEAT to use any photographed, audio recorded, or videotaped material taken of myself and my child during the SWEAT project. The photographs, audio recordings, and videotape material will only be used for research purposes and for the presentation of the research. Research purposes include promotion of SWEAT project (i.e. recruitment flyers) and research activities (i.e. SWEAT sessions, posters, social media [Facebook, Twitter, Instagram, etc.], etc.). My name and the name of my child will not be used in any publication. I will make no monetary or other claim against OSU for the use of the photograph(s)/video. As with all research consent, I may at any time withdraw permission for photos or video footage of me and my child to be used in this research project.

Please sign if you agree to the above statements:

_____ _____

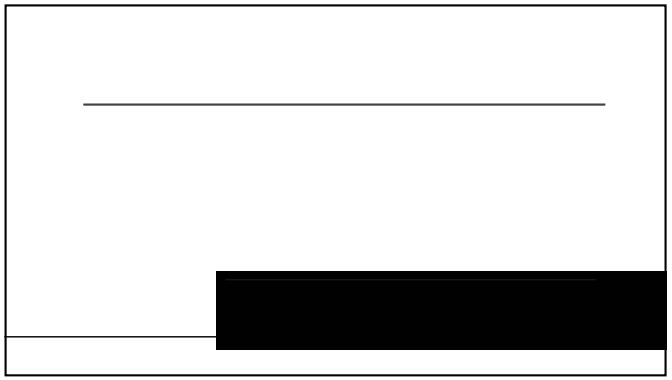
Signature **Date**

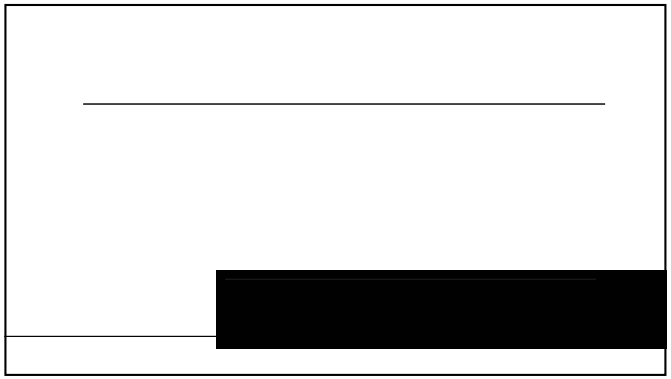
Investigator/Research Staff

I have explained the purpose of the Camp NERF Media Consent Form to the participant or his/her representative before requesting the signature(s) above. There are no blanks in this document. A copy of this form has been given to the participant or his/her representative.

Printed name of person obtaining consent	**Signature of person obtaining consent**

Appendix I: HEAL MAPPS Undergraduate Team Training PowerPoint





Appendix J: Summer Weight Environment Assessment Trial (SWEAT) Child Anthropometric and Biometric Form

Summer Weight and Environmental Assessment Trial (SWEAT)
Child Anthropometric and Biometric Form

Measure height and waist circumference to the nearest eighth of an inch. Measure weight to the nearest tenth of a pound.

1.	**Height 1**	/8	**inches**
2.	**Height 2**	/8	**Inches**
3.	*Height 3 (if 1 and 2 are different by >0.25 inch)*	/8	**inches**
4.	**Weight 1**	.	**pounds**
5.	**Weight 2**	.	**pounds**
6.	*Weight 3 (if 1 and 2 are different by >0.2 lbs)*	.	**pounds**
7.	**Waist Circumference 1**	/8	**inches**
8.	**Waist Circumference 2**	/8	**Inches**
9.	**Waist Circumference 3**	/8	**inches**
10.	**Blood Pressure 1**	/	
11.	**Blood Pressure 2**	/	
12.	**Blood Pressure 3**	/	

Appendix K: HEAL MAPPS Project and Garmin Oregon 650 Orientation

THE OHIO STATE UNIVERSITY

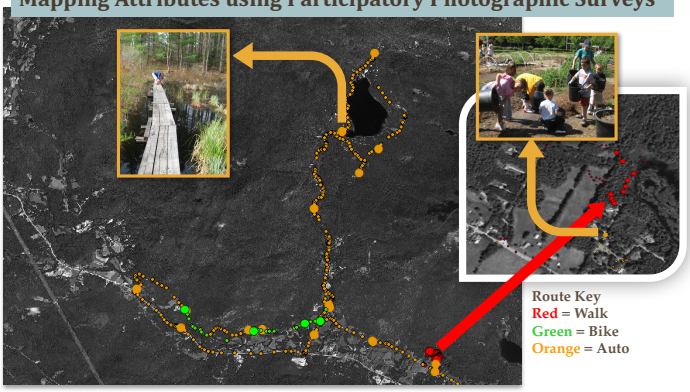
Project Summer Weight Environmental Assessment Trial (SWEAT)

Carolyn Gunther, PhD
Laura Hopkins, MSPH, RD, LD
Amy Sharn, Lead Undergraduate

Project SWEAT (Summer Weight Environmental Assessment Trial (SWEAT) has three goals…

- **Goal One**
  - Determine how summer programming protects or doesn't protect against unhealthy weight gain in children during the summer months
- **Goal Two**
  - Determine what makes healthy choices easy or difficult during the summer months
- **Goal Three**
  - Work with and within your community to start conversations with neighbors and community leaders to talk about what makes healthy eating and active living easiest in your community

HEAL MAPPS™
Healthy Eating Active Living
Mapping Attributes using Participatory Photographic Surveys



HEAL MAPPS™ works with local residents to…

Check out features of the community that make eating healthy and being physically active easy or difficult

Learn from people's different views of their local community's features that make healthy behaviors easy or difficult

Determine neighborhood factors that affect children and families and their ability to make healthy choices

Share information with local community leaders and decision-makers and plan actions to improve the community

Let's learn how to
Map Attributes using Participatory Photographic Surveys!

HEAL MAPPS™ team members will:

TODAY : Learn about Project SWEAT and complete a MAPPS™ technical training to learn to use global positioning system (GPS) and photography to assess your community's features

Within the next two days: On your own or with a partner, photograph (and map) **your experiences** of the food and physical activity environment in your community/neighborhood, including what you see (or don't) that makes it easy or hard to eat healthfully and be physically active most every day **for yourself or others with whom you directly interact**, such as family, friends, students or clients.

In a couple of weeks: Participate in a mini focus group to organize your community's HEAL MAPPS™ photo album for the community conversation.

Your HEAL MAPPS™ Photomapping Assignment

1. **Plan a route or a few routes** that will show the supports and barriers to eating healthy and being physically active most every day that you encounter in your community
2. Turn the Garmin on and **start recording your route your home**
3. Use your **typical mode of transportation** to access these supports and barriers

Your HEAL MAPPS™ Photomapping Assignment (continued)

4. Take **pictures** along your route of the things and places that make it easier or harder for you and your family to eat healthy and be physically active most every day.
5. Think about your HEAL MAPPS Route Journal and the questions it asks – we will be back in a few days to ask you questions about your photos!
6. Turn off the Garmin unit at the end of your planned route ***after*** you take a picture of your food purchase (or at some point before the end of your route)

HEAL MAPPS™ Route Journal

SWEAT HEAL MAPPS Route Journal

Instructions: For each picture you take along your "paths", please fill out one line of the journal below. On the journal, these terms mean the following:

Physically active: To engage in exercise and other physical activities that involve bodily movement and are done as part of playing, working, getting to places, doing chores, or other activities.

Eat healthy: To engage in eating behavior that considers both the quality and quantity of the foods and beverages consumed.

Easy: Fairly easy to be physical active or eat healthy. This place or thing supports physical activity or healthy eating in the community.

Hard: Fairly difficult to be physically active or eat healthy. This place or thing is a barrier to physical activity or healthy eating in the community.

Photo #	Picture of?	This is a photo of a place or that that makes it… (Check all that apply)				Why do you think this place or thing makes it easy or hard to be physically active or to eat healthy?
		Easy **to be physically active**	***Hard*** **to be physically active**	***Easy*** **to eat healthy**	***Hard*** **to eat healthy**	

HEAL MAPPS™ Route Journal: We will be doing this with you in a few days!

HEAL MAPPS™ Route Journal instructions:

For each picture you take along your HEAL MAPPS™ Route, please fill out one line of the journal on the following pages. On the journal, these terms mean the following:

Physically active: To engage in exercise and other physical activities that involve bodily movement and are done as part of playing, working, getting to destinations, doing chores, and/or recreational activities.

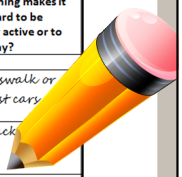
Eat healthy: To engage in eating behavior that considers both the quality and quantity of the foods and beverages consumed.

Easy: Fairly easy to be physically active or eat healthy. This place or thing supports physical activity or healthy eating in the community.

Hard: Fairly difficult to be physically active or eat healthy. This place or thing is a barrier to physical activity or healthy eating in the community.

HEAL MAPPS™ Route Journal

Photo #	Picture of?	This is a photo of a place or thing that makes it... (check all that apply):				Why do you think this place or thing makes it easy or hard to be physically active or to eat healthy?
		Easy to be physically active	Hard to be physically active	Easy to eat healthy	Hard to eat healthy	
Photo #						
001	Intersection	___	X	___	___	No Crosswalk or light fast cars
002	Bus Stop	X	___	___	___	Bike Rack
003	Farm stand	___	___	X	___	Sells fresh veggies and takes SNAP
004	Joes shake shack	___	___	___	X	Only sells fried foods



Research Ethics and Confidentiality
Our responsibility and yours….

When photographing, you must make every effort to protect the anonymity and confidentiality of local people. Team members perform a professional **research** function when you obtain information from people regardless of the way information is obtained. You are expected to maintain **professional ethical standards of confidentiality** regarding what you learn from a respondent.

1. All information about respondents obtained during the course of the research is privileged – we will never, nor should you, share identifiable information (names, photos of faces, or situations).

2. Such information is not to be discussed with or made available to anyone but project staff and CBPR participants.

3. A breach of confidentiality is a serious violation…we will do all that we can to protect the integrity of this research.

HEAL MAPPS™
User Guide
With Garmin Oregon 650

For help call: 614-292-8375; 614-407-8983

Garmin Oregon 650

Power Button

Main Menu

Satellite Bars

Camera Lens

Battery Cover

Latch

Turning the Garmin unit on

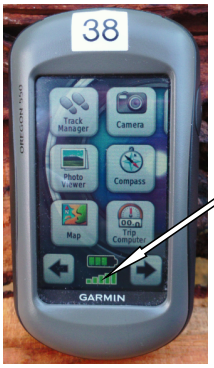
Go outdoors to an open area

Press the power button

Power Button

Starting your HEAL MAPPS™ route

Wait for all 5 of the satellite bars to turn green

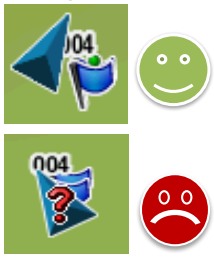


Starting your HEAL MAPPS™ route

Check to make sure the unit truly knows where you are.

Step 1

Step 2



Step 3

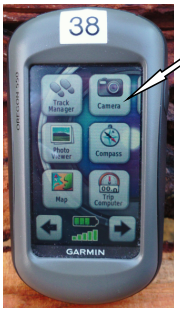
Starting your HEAL MAPPS™ route

Clear the Current Track (the GPS route) so you can start recording your HEAL MAPPS™ track (route)

Taking photographs using the Garmin Oregon 650

To activate the camera feature and take photos:

Step 1



Camera Icon

Step 2

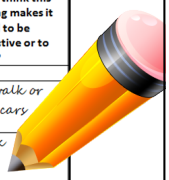
Step 3

Taking photographs using the Garmin Oregon 650

- Activate the camera feature and use it to take pictures of:
  - Opportunities for and barriers to healthy eating and physical activity on your HEAL MAPPS™ route
  - The food you purchase with the $20 Project SWEAT gives you

HEAL MAPPS™ Route Journal

Photo #	Picture of?	This is a photo of a place or thing that makes it... (check all that apply):				Why do you think this place or thing makes it easy or hard to be physically active or to eat healthy?
		Easy to be physically active	Hard to be physically active	Easy to eat healthy	Hard to eat healthy	
Photo #						
001	Intersection	___	X	___	___	No Crosswalk or light fast cars
002	Bus Stop	X	___	___	___	Bike Rack
003	Farm stand	___	___	X	___	Sells fresh veggies and takes SNAP
004	Joes shake shack	___	___	___	X	Only sells fried foods



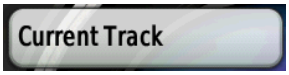
Ending your HEAL MAPPS™ route

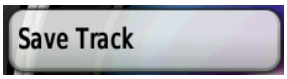
To save your route:

Touch the **Track Manager icon**

Touch **Current Track**

Touch **Save Track**





Ending your HEAL MAPPS™ route

Touch the **green check mark icon** to save the name of the track

Touch **Yes**; you want to clear the current track

Press and hold the power button to turn off the Garmin unit.

Hints

- To see pictures
  - To look at your pictures: touch the photo viewer on the main menu, then touch the X to get back to the main screen. *Those instructions are in your user guide.*
- To see your HEAL MAPPS route
  - If you want to see your route: touch track manager icon in the main menu and follow instructions on rest of user guide.
- To lock, unlock, or exit screens
  - –Press and release the power button really quickly and it will come up with a screen: ”do you want to lock the screen” and you will say “yes” by touching the yes icon.
  - –To unlock screen: press and release the power button again and unlock the screen that way.

Hints

- To turn the unit back on, if it turns off
  - You’ll want to keep the GARMIN on at all times when you are on your route, if you accidently turn it off and back on again wait a couple minutes to make sure satellite signal is fully
- To replace the batteries
  - If unit runs out of battery power, extra batteries are in individual kit and instructions are in kit. **DO NOT TOSS old batteries**, they are rechargeable, put them back in kit.
- Check your satellite signal frequently
  - If you lose signal simply find a place to stand still for a few minutes while you wait for it to find you. Then continue on your route, when ready.

THE OHIO STATE UNIVERSITY

Project Summer Weight Environmental Assessment Trial (SWEAT)

- Questions about how to use the Garmin units?
- Questions about the HEAL MAPPS™ process?

Now and next steps…

Now…

Complete all forms

Determine how to return equipment

Ask clarifying questions

Next steps…

Think about-plan your MAPPS™ route

Complete your HEAL MAPPS™ route – AND think about the route journal along the way for your meeting a few days from now

Return your equipment at your next meeting with our team

Important Dates to Remember

TBD Focus Group

TBD Community Conversation

Appendix L: SWEAT HEAL MAPPS Route Journal

SWEAT HEAL MAPPS Route Journal

Instructions: For each picture you take along your "paths", please fill out one line of the journal below. On the journal, these terms mean the following:

Physically active: To engage in exercise and other physical activities that involve bodily movement and are done as part of playing, working, getting to places, doing chores, or other activities.

Eat healthy: To engage in eating behavior that considers both the quality and quantity of the foods and beverages consumed.

Easy: Fairly easy to be physical active or eat healthy. This place or thing supports physical activity or healthy eating in the community.

Hard: Fairly difficult to be physically active or eat healthy. This place or thing is a barrier to physical activity or healthy eating in the community.

Photo #	**Picture of?**	**This is a photo of a place or that that makes it… (Check all that apply)**				**Why do you think this place or thing makes it easy or hard to be physically active or to eat healthy?**
		Easy **to be physically active**	***Hard*** **to be physically active**	***Easy*** **to eat healthy**	***Hard*** **to eat healthy**	

Photo #	Picture of?	This is a photo of a place or that that makes it… (Check all that apply)				Why do you think this place or thing makes it easy or hard to be physically active or to eat healthy?
		Easy **to be physically active**	***Hard*** **to be physically active**	***Easy*** **to eat healthy**	***Hard*** **to eat healthy**	

Appendix M: Caregiver Focus Group Guide

Summer Weight and Environmental Assessment Trial (SWEAT)
Community Stakeholder Focus Group Guide

Community Stakeholder Focus Group Questions

Instructions: Read the questions in order and verbatim. Allow the participant enough time to consider their response. If they provide a simple, few word answers, utilize techniques from training to probe for more depth. These questions are meant to be representative, but not necessarily comprehensive. ***DO NOT*** *deviate from the topic of the questions, however, you may ask* ***APPROPRIATE*** *questions not listed in order to probe for answers or redirect the interview to the intended questions.*

1. What are your perceptions of the food that children consume at school during the school year? What about outside of school during the school year?
2. What are your perceptions of the amount and types of activities that children perform at school during the school year? What about outside of school during the school year?
3. How do you think the foods that children consume during the school year vary from those that they consume during the summer?

4. **How do you think the activities that children perform during the school year vary from the activities that they perform during the summer?**

5. **What are your perceptions of the food that children consume during the summer?**

6. **What are your perceptions of the activities that children perform during the summer?**

7. **Are there barriers to healthy eating or physical activity for children in this neighborhood? What are they? Please consider the HEAL MAPPS displayed here.**

8. **Are there facilitators to healthy eating or physical activity for children in this neighborhood? What are they? Please consider the HEAL MAPPS displayed here.**
9. **What steps need to be taken by this community to improve these barriers and facilitators? What resources are needed for these steps to take place? How should these resources be obtained?**

Appendix N: Child Focus Group Guide

SWEAT HEAL MAPPS Focus Group Questions

Instructions: Read the questions in order and verbatim. Allow the participant enough time to consider their response. If they provide a simple, few word answers, utilize techniques from training to probe for more depth. These questions are meant to be representative, but not necessarily comprehensive. ***DO NOT*** *deviate from the topic of the questions, however, you may ask* ***APPROPRIATE*** *questions not listed in order to probe for answers or redirect the interview to the intended questions.*

Eating Healthy
1. What are your favorite foods to eat? Why are these your favorite foods? Do you eat these foods all year round or just during the summer? Why? We can use the pictures if you would like.
2. What are your least favorite foods to eat? Why are these your least favorite foods? Do you eat these foods all year round or just during the summer? Why? We can use the pictures if you would like.
3. Are there foods that you want to eat during the summer but can't? What foods are those? Why do you think you can't eat them?

For each photo or set of photos:
4. With this photo, you said it was EASY/HARD to be eat healthy. Why did you say that? Can you talk to me about that a little bit more?
Being Physically Active
5. What are your favorite activities to do? Why are these your favorite activities? Do you do these activities all year round or just during the summer? Why? We can use the pictures if you would like.
6. What are your least favorite activities to do? Why are these your least favorite activities? Do you do these activities all year round or just during the summer? Why? We can use the pictures if you would like.
7. Are there activities that you want to do during the summer but can't? What activities are those? Why do you think you can't do them?

8. Do you play on any teams during the summer? What teams? How often do you practice or play?
For each photo or set of photos:
9. With this photo, you said it was EASY/HARD to be physically active. Why did you say that? Can you talk to me about that a little bit more?